

Update on the Karluk Lake Nutrient Enrichment

Preliminary Environmental Assessment

On December 4th, 2014, the U.S. Fish and Wildlife Service released for public review a preliminary Environmental Assessment (EA) in response to the Kodiak Regional Aquaculture Association's (KRAA) Karluk Lake Nutrient Enrichment proposal. The Service accepted public comments on the EA through February 9th, 2015. KRAA has informed the Service that they do not desire to carry out an enrichment of Karluk Lake in 2015, as their lake monitoring shows that "application of nutrients would not be indicated for the 2015 growing season." The Service feels, nevertheless, that it is prudent to continue moving forward with the assessment process. In an effort to conduct a comprehensive review of feedback, we anticipate releasing a Final Environmental Assessment in the summer of 2015.

Under the National Environmental Policy Act (NEPA), we are currently in the process of reviewing the responses we received during the public comment period. Public input and further analysis contribute to a Final Environmental Assessment, which will address substantive comments and will include a decision document regarding the proposal.

During the public comment period, outreach included announcing availability of the document and the public comment process on the Kodiak Refuge website, by email, and by postcards mailed to 466 people. We also posted a digital copy of the document with an informational Q&A sheet on the Kodiak Refuge website, placed hard copies at several locations in Kodiak, and distributed copies on request. Twenty six people attended an open house at the Kodiak Refuge Visitor Center on January 13, 2015.

We received a total of 39 comments, either on forms at our open house, via email, or written letters. All public comments are available for review upon request. Both individuals and organizations contributed comments, representing Kodiak fishermen, KRAA, the Alaska Department of Fish and Game, the Alaska Congressional Representatives, several local Tribal Organizations, and several conservation organizations including the Kodiak Audubon Society. We include here a cross-section of representative comments and concerns received during the open house and public comment period, grouped by topical areas. Please note that the following document does not reflect the perspective of the US Fish and Wildlife Service, but seeks to represent a variety of public response.

Enhancement or Restoration

The preliminary EA characterized the nutrient enrichment proposed by KRAA as a “fishery enhancement project.” Many people commented that KRAA had proposed a restoration action not an enhancement action, and that the project should be evaluated as restoration. Comments also varied on whether the project should be allowed to move forward now or if it should be allowed as an option for restoration in the future if the system required additional nutrients to restore a healthy salmon population.

Socio-economic Effects

Many Kodiak fishermen commented that the local and regional economies depend on healthy fisheries and that this project could “stabilize the fishery for Kodiak residents and the local economy.” In particular, fishing families operating set-net sites on the west side of Kodiak Island felt particularly hard-hit economically from the diminished sockeye returns of 2008-2011. They also felt that the Karluk fishery is primarily exploited by people who live and work in Kodiak and that impacts to it have a large impact on the local Kodiak economy. We also heard that downturns in fisheries have resulted in “multigenerational native families exiting the set-net fishery.” One commenter mentioned that “the project could mitigate the economic hardships associated with natural and predictive variation in productivity without showing any harm.” Another commenter thought that not doing the project could have far reaching economic and social impacts for subsistence and sports users, as well as commercial fishermen.

One commenter noted that Karluk is no longer purely a natural run, that it is the US government’s obligation to keep it healthy and sustainable and, if necessary, written laws should be changed so the government could help small and large business owners support their families and employees. Similarly, other commenters were concerned about the apparent lack of support (by the Service) for the proposed rehabilitation of Karluk, and the implied lack of concern for the people that rely on a healthy resource economy. They felt that policy makers have a commitment to the people they serve to minimize preventable and undue economic hardships – even for those resources with boom and bust cycles. They also noted that the Kodiak Refuge CCP provided for fishery restoration, including Karluk Lake.

Status of Karluk Sockeye Salmon and Need for the Project

The majority of individual commenters who identified themselves as commercial fishermen supported Alternative B, the proposed fertilization of Karluk Lake, although support by fishermen was not unanimous. Many of these individuals were concerned about the low Karluk sockeye returns between 2008 and 2011 and the impacts to the livelihood of commercial fishermen and the economy of Kodiak. Several people were also concerned that, although the more recent runs (2010-2014) have met or exceeded escapement goals, the lake would still not

be productive enough to support higher runs in the long term. In addition, some commenters felt that action is needed now in light of large over-escapement in 2014.

Others felt that the Karluk sockeye salmon run has been restored, the stock is not depressed and therefore the project is unnecessary. Several commenters noted that recent monitoring data show that smolt are large and in good condition, zooplankton numbers have remained high (even in 2014), and sockeye escapement has exceeded goals. They consider that Karluk sockeye have recovered and productivity is likely to continue, and note that the recent strong runs indicate that normal variation and careful management obviate the justification for costly and disruptive interventions. Several people commented that the proposed project is costly and benefits limited users (fishermen) at the expense of others (fishermen).

Lake Productivity

Regarding the need to restore productivity, one commenter noted that Karluk is very productive for its size, and adding fertilizer is not likely to make it more productive in the long run. Another commenter felt that the proposal's protocol for determining whether to fertilize and how much fertilizer to apply appears determined almost exclusively by the level of phosphorus without much weight to any of the other indicators of a healthy sockeye rearing environment. One commenter questioned how the enriched productivity could be maintained without continued annual application of fertilizer.

Others commented that past enrichment efforts were successful in the short term, but long term goals were not met: the system recently reverted to low production, and in hindsight the fertilization should have continued for a longer period. Some commenters determined that the 1980's Karluk Lake fertilization project failed to show any effect on the size of adult salmon runs, while others felt that the benefits resulting from the past fertilization are undeniable.

Fish & Game Management

Several commenters felt the best way to maintain (and increase) productivity of the Karluk sockeye runs is to "allow the Alaska Department of Fish and Game (ADF&G) to manage our fishery to provide escapements within the goal ranges and to adjust those ranges based on continuing collection and analysis of biological data" and that this "may rectify the problems of low recent runs without the intervention (fertilization)...Historically, careful management has rebuilt low runs to normal levels." Specifically, one commenter noted that with "in-season emergency orders that can immediately close a fishery if needed, ADF&G has the tools to minimize or prevent potential negative effects on other salmon species."

Several commenters noted that the 2008-11 run declines were due to over-escapement in previous years; some note that, if lake enrichment increases the runs to historical levels, ADF&G has the tools to properly manage the fishery.

Karluk is a special/valuable place in the Refuge/Kodiak Archipelago

Several comments pointed out that Karluk Lake is an iconic system on Kodiak with world-class scenery, wildlife viewing, fishing, and a place to experience wilderness. It is significant for both the Refuge and (the “crown jewel”) the archipelago. People felt that the annual runs of sockeye and Chinook salmon from Karluk Lake are a keystone of the Refuge’s food chain and that the system “should be left alone to see what naturally develops.” Karluk could serve as a control, population fluctuations and all, for the KRAA enhancement experiments elsewhere in the archipelago. It should be maintained as a standard of a more natural ecosystem for long term conservation and to learn more about natural cycles of Kodiak salmon and brown bears.

Compatibility and other Service Laws, Regulations, and Policies

Some commenters felt that the proposed project is compatible with the Refuge purpose and management goals, and could mitigate the economic hardships associated with natural and predictable variation in productivity. They contend that the risk of unintentional harm to the system is very low, and therefore the project should move ahead; some advocated only as a method of restoration, not an enhancement.

Several others commented that none of the action alternatives, including the proposed action, are compatible with Refuge System mission or the ANILCA 303(5) refuge purposes that requires Kodiak Refuge to “conserve fish and wildlife populations (and) habitats in their natural diversity,” and requested that the Service deny the permit. Commenters with this view also noted that the proposed action would allow maintaining artificially high levels of salmon in the lake on a sustained basis and that the Service cannot permit actions which increase populations beyond natural levels solely for human use.

One comment highlighted the Biological Integrity Policy that directs the Service to “maintain existing levels of biological diversity, integrity and environmental health and only attempt to restore ‘lost or severely degraded elements...where it supports the refuge and the NWRS,’ not to keep artificially-induced salmon runs on ‘life support.’”

Subsistence

Ouzinkie Native Corporation noted that subsistence harvest opportunities were eliminated or severely curtailed in proximity to Ouzinkie during years with low returns and especially when returns did not meet escapement. They also requested fertilization as an option to “maximize production when weather conditions are less favorable.” The Old Harbor Native Corporation did not comment on subsistence opportunities directly but noted that when the Karluk run is strong it draws seiners from the (Old Harbor) area resulting in fewer vessels in the Old Harbor area and allowing Old Harbor fishermen “to make their season.”

Other Concerns

Other concerns include potential impacts to wildlife and the visitor experience from increased air traffic, and increased and unbudgeted costs to the Service to monitor permit use. One commenter suggested that any permit should contain conditions to mitigate potential impacts to big game hunters and other visitors, and that the Service should work with commercial service providers to set the conditions.

KRAA Comments

KRAA provided extensive comments (43 pages), and we are still working through their submission. Included here is their summary of the “consolidated views of the Association.”

- 1) Restoration or Enhancement: Mischaracterization of the 2012 KRAA proposal as an enhancement strategy which is contrary to KRAA’s intent, and the misrepresentation by omission of the definition of restoration in the Revised Comprehensive Conservation Plan Kodiak National Wildlife Refuge.
- 2) Escapement: Confusion of escapement as static or as controlled by commercial fishing without acknowledgement of management actions to manage a mixed stock fishery.
- 3) Overescapement: Confusion over causes of reduced marine derived nutrients (MDN)
- 4) Eutrophication: Misrepresentation of Hyatt et. al. (2004) as a means to describe possible eutrophication scenario for Karluk.
- 5) Survival Rates: Representation of sockeye salmon survival rates (both hatchery and naturally incubated).
- 6) Terminology: Clarification on terminology and definitions (either in the EA or KRAA’s comments).